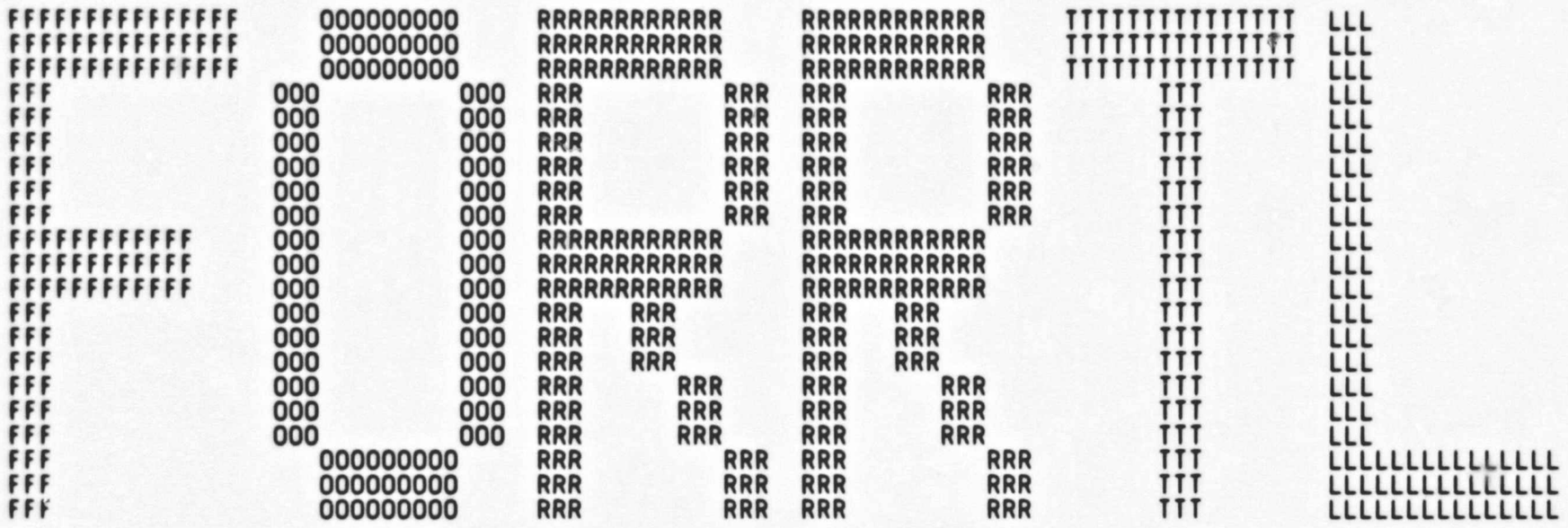
FORTRAN
LLLLLLLLLLLLLLL

FILEID**FORENCOMO

```
FFFFFFFFFF    OOOOOO    RRRRRRRR    EEEEEEEEEE  NN      NN   CCCCCCCC    OOOOOO    MM      MM    OOOOOO
FFFFFFFFFF    OOOOOO    RRRRRRRR    EEEEEEEEEE  NN      NN   CCCCCCCC    OOOOOO    MM      MM    OOOOOO
FF          OO      OO  RR      RR  EE          NN      NN  CC          OO      OO  MMMM    MMMM  OO      OO
FF          OO      OO  RR      RR  EE          NN      NN  CC          OO      OO  MMMM    MMMM  OO      OO
FF          OO      OO  RR      RR  EE          NNNN    NN  CC          OO      OO  MM  MM  MM  MM  OO      OO
FF          OO      OO  RR      RR  EE          NNNN    NN  CC          OO      OO  MM  MM  MM  MM  OO      OO
FFFFFFFF    OO      OO  RRRRRRRR    EEEEEEEE    NN  NN  NN  CC          OO      OO  MM      MM  MM  OO      OO
FFFFFFFF    OO      OO  RRRRRRRR    EEEEEEEE    NN  NN  NN  CC          OO      OO  MM      MM  MM  OO      OO
FF          OO      OO  RR  RR      EE          NN    NNNN  CC          OO      OO  MM      MM  MM  OO      OO
FF          OO      OO  RR  RR      EE          NN    NNNN  CC          OO      OO  MM      MM  MM  OO      OO
FF          OO      OO  RR    RR    EE          NN      NN  CC          OO      OO  MM      MM  MM  OO      OO
FF          OO      OO  RR    RR    EE          NN      NN  CC          OO      OO  MM      MM  MM  OO      OO
FF            OOOOOO    RR      RR  EEEEEEEEEE  NN      NN   CCCCCCCC    OOOOOO    MM      MM    OOOOOO
FF            OOOOOO    RR      RR  EEEEEEEEEE  NN      NN   CCCCCCCC    OOOOOO    MM      MM    OOOOOO

LL              IIIIII      SSSSSSSS
LL              IIIIII      SSSSSSSS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II        SSSSSS
LL                II        SSSSSS
LL                II              SS
LL                II              SS
LL                II              SS
LL                II              SS
LLLLLLLLLL      IIIIII    SSSSSSSS
LLLLLLLLLL      IIIIII    SSSSSSSS
```

Table of contents

```
0000     1          .TITLE  FOR$ENCODE_MO - entry point for FORTRAN ENCODE OBJECT-FORMATTED
0000     2          .IDENT  /1-011/         File: FORENCOMO.MAR  Edit: JAW1011
0000     3 ;
0000     4 ;*****************************************************************************
0000     5 ;*                                                                           *
0000     6 ;*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                 *
0000     7 ;*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                   *
0000     8 ;*  ALL RIGHTS RESERVED.                                                     *
0000     9 ;*                                                                           *
0000    10 ;*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED    *
0000    11 ;*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE   *
0000    12 ;*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER    *
0000    13 ;*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY    *
0000    14 ;*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY    *
0000    15 ;*  TRANSFERRED.                                                             *
0000    16 ;*                                                                           *
0000    17 ;*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE    *
0000    18 ;*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
0000    19 ;*  CORPORATION.                                                             *
0000    20 ;*                                                                           *
0000    21 ;*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS    *
0000    22 ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                  *
0000    23 ;*                                                                           *
0000    24 ;*                                                                           *
0000    25 ;*****************************************************************************
0000    26 ;
0000    27 ;
0000    28 ;++
0000    29 ; FACILITY: FORTRAN Support Library - user callable
0000    30 ;
0000    31 ; ABSTRACT:
0000    32 ;
0000    33 ;       This module contains the entry point for the FORTRAN
0000    34 ;       ENCODE OBJECT-FORMATTED I/O statement.  It is simply
0000    35 ;       a call to FOR$$IO_BEG with bits in R0 which describe the
0000    36 ;       parameter list.  FOR$$IO_BEG interprets the parameters.
0000    37 ;
0000    38 ; MAINTENANCE NOTE:
0000    39 ;       The transfer vector (RTLVECTOR+ALLGBL) must have the following:
0000    40 ;
0000    41 ;       .TRANSFER       FOR$ENCODE_MO
0000    42 ;       .MASK           FOR$$IO_BEG
0000    43 ;       BRW             FOR$ENCODE_MO+2
0000    44 ;
0000    45 ;       This puts the correct mask in entry vector, that is FOR$$IO_BEG entry mask.
0000    46 ;       Furthermore this module must only use R0 and R1
0000    47 ;       since any other register might not be in the entry mask for FOR$$IO_BEG.
0000    48 ;
0000    49 ; ENVIRONMENT: User access mode; mixture of AST level or not
0000    50 ;
0000    51 ; AUTHOR:       Richard B. Grove, CREATION DATE: 28-May-78
0000    52 ;
0000    53 ; MODIFIED BY:
0000    54 ;       T. Hastings, 29-July-78
```

```
0000            .SBTTL  HISTORY            ; Detailed Current Edit History
0000
0000
0000    ; Edit History for Version 1
0000    ;
0000    ; 0-10  - Add comment about vectors.  TNH 23-June-78
0000    ; 0-12  - Pass arg in R0, not R0R, add comments.  TNH 29-July-78
0000    ; 1-001 - Update version number and copyright notice.  JBS 16-NOV-78
0000    ; 1-002 - Change statement type symbols to be LUB$K...  JBS 07-DEC-78
0000    ; 1-003 - Change statement type symbols to be ISB$K...  JBS 11-DEC-78
0000    ; 1-004 - Add " " to the PSECT directive.  JBS 22-DEC-78
0000    ; 1-005 - Add FOR$READ_KF, FOR$READ_KO, FOR$REWRITE_SF, FOR$REWRITE_SO,
0000    ;         FOR$READ_IF, FOR$READ_IO, FOR$WRITE_IF, FOR$WRITE_IO,
0000    ;         FOR$READ_KU, FOR$REWRITE_SU,
0000    ;         SBL 2-May-1979
0000    ; 1-006 - Remove all entry points that need object time formatting,
0000    ;          putting them in FOR$ENTRY_OBJ so that we can arrange to
0000    ;          load the format compiler only when it is needed.
0000    ;          JBS 26-JUN-1979
0000    ; 1-007 - Remove entry point FOR$ENCODE_MF; we will code a new module
0000    ;          for it and FOR$$IO_BEG, to see how much I/O initiation time
0000    ;          improves.  JBS 02-JUL-1979
0000    ; 1-008 - Do likewuse for FOR$READ_DU and FOR$WRITE_DU.  JBS 03-JUL-1979
0000    ; 1-009 - Remove all entry points and add FOR$ENCODE_MO;  each entry
0000    ;          point gets its own module do we can selectively load
0000    ;          the necessary UDF and REC modules.  JBS 09-JUL-1979
0000    ; 1-010 - New parameter format for FOR$$IO_BEG.  SBL 5-Dec-1979
0000    ; 1-011 - Change BRW FOR$$IO_BEG+2 to JMP G^FOR$$IO_BEG+2.  JAW 21-Feb-1981
```

```
                        .SBTTL  DECLARATIONS

;
; INCLUDE FILES:
;

                        $FORPAR                         ; Define inter-module FORTRAN symbols
                        $ISBDEF                         ; Define statement type symbols

;
; EXTERNAL SYMBOLS:
;

                        .DSABL  GBL                     ; Declare all external symbols
                        .EXTRN  FOR$$IO_BEG             ; common I/O statement processing
;+
; The following references are to make sure the necessary UDF and REC
; modules are loaded.  These are the routines which are called through
; the dispatch tables in FOR$$DISPAT.
;-
                        .EXTRN  FOR$$UDF_WF0, FOR$$UDF_WF1, FOR$$UDF_WF9
                        .EXTRN  FOR$$REC_WMF0, FOR$$REC_WMF1, FOR$$REC_WMF9
;+
; The following reference makes sure the format compiler is loaded.
;-
                        .EXTRN  FOR$$FMT_COMPIL

;
; MACROS:
;
;       NONE
;
; PSECT DECLARATIONS:
;

00000000                .PSECT  _FOR$CODE PIC,USR,CON,REL,LCL,SHR,EXE,RD,NOWRT,LONG

;
; EQUATED SYMBOLS:
;


;
; OWN STORAGE:
;
;       NONE
;
```

```
                                        .SBTTL  FOR$ENCODE_MO - ENCODE OBJECT-FORMATTED

                                ;++
                                ; FUNCTIONAL DESCRIPTION:
                                ;
                                ;       Initialize the FORTRAN I/O system to perform
                                ;       a ENCODE OBJECT-FORMATTED I/O statement.
                                ;
                                ; CALLING SEQUENCE:
                                ;
                                ;       CALL FOR$ENCODE_MO (char_cnt.rlu.v, format_adr.rt.r, usr_buf_adr.wt.ra
                                ;               [, err_adr.j.r [, end_adr.j.r]])
                                ;
                                ; INPUT PARAMETERS:
                                ;
                                ;       unit.rl.v               logical unit number
                                ;       format_adr.rt.r         format string (needs compilation)
                                ;       usr_buf_adr.wt.ra       adr. of user's buffer
                                ;       [err_adr.j.r]           optional ERR= address
                                ;       [end_adr.j.r]           optional END= address
                                ;
                                ; IMPLICIT INPUTS:
                                ;
                                ;       NONE except those used by FOR$$IO_BEG.
                                ;
                                ; OUTPUT PARAMETERS:
                                ;
                                ;       NONE
                                ;
                                ; IMPLICIT OUTPUTS:
                                ;
                                ;       NONE except those left by FOR$$IO_BEG.
                                ;
                                ; COMPLETION CODES:
                                ;
                                ;       NONE
                                ;
                                ; SIDE EFFECTS:
                                ;
                                ;       NONE except those of FOR$$IO_BEG.
                                ;
                                ;--

                        0000'   FOR$ENCODE_MO:: .MASK   FOR$$IO_BEG
50   010B 8F     3C     0002                    MOVZWL  #ISB$K_ST_TY_WMF+       -
                                                        <1@FOR$V_OBJ_FMT>, R0   ; Statement type
 00000002'GF     17     0007                    JMP     G^FOR$$IO_BEG+2         ; branch past call mask

                                        .END
```

```
FOR$$FMT_COMPIL                 ********   X   00
FOR$$IO_BEG                     ********   X   00
FOR$$REC_WMF0                   ********   X   00
FOR$$REC_WMF1                   ********   X   00
FOR$$REC_WMF9                   ********   X   00
FOR$$UDF_WF0                    ********   X   00
FOR$$UDF_WF1                    ********   X   00
FOR$$UDF_WF9                    ********   X   00
FOR$ENCODE_MO                   00000000 RG    01
FOR$V_OBJ_FMT                 = 00000008
ISB$K_ST_TY_WMF               = 0000000B
```

Psect synopsis

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
_FOR$CODE	0000000D (13.)	01 (1.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC LONG

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.08	00:00:00.51
Command processing	118	00:00:00.63	00:00:03.98
Pass 1	128	00:00:01.27	00:00:04.92
Symbol table sort	0	00:00:00.19	00:00:00.33
Pass 2	56	00:00:00.53	00:00:01.97
Symbol table output	3	00:00:00.02	00:00:00.06
Psect synopsis output	2	00:00:00.02	00:00:00.05
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	338	00:00:02.75	00:00:11.82

```
The working set limit was 1050 pages.
6710 bytes (14 pages) of virtual memory were used to buffer the intermediate code.
There were 20 pages of symbol table space allocated to hold 188 non-local and 0 local symbols.
182 source lines were read in Pass 1, producing 8 object records in Pass 2.
9 pages of virtual memory were used to define 2 macros.
```

Macro library statistics

Macro library name	Macros defined
_255DUA28:[FORRTL.OBJ]FORRTL.MLB;1	2
_255DUA28:[SYSLIB]STARLET.MLB;2	0
TOTALS (all libraries)	2

```
183 GETS were required to define 2 macros.

There were no errors, warnings or information messages.
```

```
MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS$:FORENCOMO/OBJ=OBJ$:FORENCOMO MSRC$:FORENCOMO/UPDATE=(ENH$:FORENCOMO)+LI
```

FORFIND
LIS

FORFMTINT
LIS

FOREXITHA
LIS

FORENODEF
LIS

FORENCOMF
LIS

FORIDATE
LIS

FORENDFIL
LIS

FORERRSNS
LIS

FOREXIT
LIS

FORERROR
LIS

FORFMTCP
LIS

FORENCOMO
LIS

FORTNIDES
LIS